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AUTHOR Steyaert, James P.; Snyder, John F.
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ABSTRACT

Performance on the Digit Span (DSP) and Digit Symbol (DSY) subtests of the Wechsler Adult Intelligence Scale (WAIS) have been said to be vulnerable to the effects of anxiety, seating arrangements, and sex of subject. To determine the effects of these variables on anxiety and test performance on the WAIS-R DSP and DSY subtests, 40 male and 40 female college students were administered the subtests after being assigned to a seating position (corner-to-corner vs. face-to-face). Both before and after the subtest administration, subjects completed the Affective Adjective Checklist to assess their anxiety status. An analysis of the results showed that seating arrangement, anxiety levels, and sex of subject had no significant effect on subtest scores. Further, anxiety was unrelated to seating arrangement or subject gender. (BL)

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Seating arrangement and anxiety as related to WAIS-R subtest performance

James P. Steyaert
and
John F. Snyder

Southern Illinois University
Carbondale, IL 62901

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Abstract

Seating arrangement and anxiety as related to WAIS-R subtest performance

School - assessment/diagnosis

This research investigated the effects of dyadic seating arrangement as it relates to performance on the Digit Span and Digit Symbol subtests of the Wechsler Adult Intelligence Scale-Revised (WAIS-R) and on anxiety. The subtests and the "Now" version of the Affective Adjective Check List (AACL) were administered to 40 male and 40 female subjects to determine any relationships that may exist between seating arrangement, sex of subject, subtest performance, and state anxiety. Results revealed that seating arrangement, anxiety level, and sex of subject has no significant effect on subtest scores. Anxiety was unrelated to seating arrangement and subject gender. Thus, persons using these subtests will not have to be concerned about seating arrangement and further will not expect a difference due to gender.

School - assessment/diagnosis

Introduction

Performance on the Digit Span (DSp) and Digit Symbol (DSy) subtests of the Wechsler Adult Intelligence Scale (WAIS) have been said to be vulnerable to the effects of anxiety and other affective states (Piretto & Davey, 1971; Piretto & Walker, 1972). In addition, the seating arrangement in differing dyad situations has been shown to affect anxiety and similar affective states in subjects (Haas & DiMattia, 1970; Klainer, 1977). Delprato and Jackson (1975), in their study of the effects of seating arrangement upon WAIS-DSp and WAIS-DSy performance, found that the scores of certain subjects may be influenced by the seating arrangement used in testing. Further analysis of seating position as it relates to state anxiety in subjects may aid in accounting for decrements in DSp and DSy scores on the WAIS. Sex of subject has also been shown to be an important variable in studies of seating arrangement (Burgoon & Jones, 1976; Shore, 1976). The present study was designed to determine the effects of seating position and sex of subject on anxiety level and associated test performance on the WAIS-R DSp and DSy subtests.

Subjects

Subjects were 40 male and 37 female undergraduate students enrolled in an introductory psychology course at Southern Illinois University who participated in the experiment as partial fulfillment of course requirements. Three other female students were asked to participate such that an equal number of males and females were represented.

Experimental Procedure

Seating arrangement was counterbalanced; half of the subjects were in a corner-to-corner position and the other half were in a face-to-face position relative to the experimenter. The order of administration was counterbalanced by the experimenter (abba). Upon entering the testing room, the subject was offered a seat in the preselected position relative to the desk. The experimenter was seated away from the desk and introduced herself and after having the subject fill out a basic data form explained that "the instructions accompanying this study are presented on an audio tape," which the experimenter then played. The tape informed subjects that they would be asked to fill out a form that assesses how the subject felt "right now." After the subject had heard the tape, the experimenter presented the subject with the initial anxiety measure (pre-AACI). After the subject finished, the experimenter collected the pre-AACI and administered the appropriate subtest in a seated position at the desk.

The subjects remained naive to the subtests until presented with them. The experimenter administered the DSp or DSy subtest according to the instructions presented in the WAIS-R manual (Wechsler, 1981). After completing the DSp or DSy subtest, the subject was then given the AACI once again. Finally, subjects were debriefed and were given credit slips for having completed the study.

Results

A 2x2 analysis of variance (ANOVA) was employed to assess the presence of main effects and interaction effects. For the Digit Span and Digit Symbol subtests there were no main effects or interaction effects found for seating position and sex of subject variables at the alpha=.05 level of significance. Table 1 summarizes the mean subtest scores for subjects in each of the DSp and DSy subtest treatment groups.

Analysis of covariance (ANCOVA) was called for in order to examine any effect the state anxiety variable may have had as a mediator between the two independent variables and scores on the two subtests. The covariate (Pre-AACL) however did not correlate significantly with subtest scores and therefore it was deemed that ANCOVA would not prove beneficial. Moreover, it may be concluded that the state anxiety variable did not significantly effect DSp or DSy subtest scores. The mean pre- and post-anxiety (AACL) scores grouped by sex of subject and seating position are presented for the DSp and DSy subtests in tables 2 and 3, respectively.

A post-hoc ANOVA with the post-AACL measure as the dependent variable was employed in order to examine the effect of seating arrangement and sex of subject on the anxiety measure. For the DSp subtest no main effects were found; a significant interaction, however, was found ($F=4.17$, $df=1/39$, $p<.05$). While there are no obvious trends in the data on the DSp subtest, visual inspection of table 3 evidences noteable trends among DSy means. Post-hoc t-tests on the data from tables 2 and 3 indicated that the only statistically significant difference between groups was that

between male and female post-AACI scores in the face-to-face seating position for the DSy subtest. An additional post-hoc analysis of interaction of comparisons between means (Keppel, 1973) was employed. The analysis of post-AACI score comparisons of means relative to seating position resulted in no significant findings. Post-AACI scores were not affected by the seating position variable. Likewise, anxiety measure comparisons of means relative to DSp versus DSy subtests were found to be statistically insignificant.

Table 1

Subtest Mean Raw Scores and Standard Deviations for the Eight Experimental Treatment Groups

	Digit Span		Digit Symbol	
	corner-to-corner	face-to-face	corner-to-corner	face-to-face
Male	15 (2.45)	15 (2.0)	61 (5.37)	59.8 (11.55)
Female	15.4 (3.23)	16.9 (4.3)	64.4 (12.9)	65.9 (7.5)

Conclusions:

In summary, the variables of seating arrangement and sex of subject, in this study, did not have a significant effect on scores on the digit span or digit symbol subtests of the WAIS-R. It was also found that state anxiety did not have an effect on DSp or DSy subtest scores. Although a significant interaction effect was found between seating arrangement and sex of subject with state anxiety as the dependent variable, the meaning of this finding is subject to interpretation, not the least of which is statistical artifact. Another post-hoc analysis indicated that state anxiety did not differ as a function of seating position or subtest administration.

These findings have particular significance in that they indicate that seating position of subject relative to examiner and sex of subject do not affect DSp or DSy scores on the WAIS-R under standard conditions such as used in this study, and that state anxiety likewise does not significantly affect DSp or DSy subtest scores and is unrelated to both dyad seating arrangement and sex of subject.

The present study does not imply that factors other than seating arrangement or sex of subject cannot affect test scores or measures of anxiety. Perhaps variables such as room decor, personal style of experimenters, and lighting can affect scores but this is beyond the scope of the present study. The findings in this study do warrant the conclusion that under well-controlled conditions (e.g., taped instructions, single experimenter, etc.)

sex of subject and seating arrangement do not produce different scores on Digit Span or Digit Symbol subtests of the Wechsler Adult Intelligence Scale-Revised or on the Affective Adjective Check List anxiety measure.

Table 2

Mean Pre- and Post-AACL Scores for Treatment Groups Receiving the Digit Span Subtest

	corner-to-corner		face-to-face	
	Pre	Post	Pre	Post
Male	8.6 (3.1)	8.0 (2.3)	7.3 (2.5)	9.6 (3.0)
Female	7.9 (2.7)	10.4 (3.7)	8.3 (4.4)	7.8 (3.3)

Table 3

Mean Pre- and Post-AACL Scores for Treatment Groups Receiving the Digit Symbol Subtest

	corner-to-corner		face-to-face	
	Pre	Post	Pre	Post
Male	6.5 (2.4)	7.6 (1.2)	5.6 (1.9)	6.2 (2.9)
Female	7.1 (3.9)	6.7 (4.4)	7.4 (3.6)	9.3 (3.0)

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